

## OPILIACEAE OF THAILAND

Paul Hiepko\*

Six of the seven genera of Opiliaceae known from tropical Asia are indigenous to Thailand. The number of species in Thailand is seven. These are trees, shrubs or scandent shrubs (lianas). Two of them are known as root parasites: *Cansjera rheedii* and *Opilia amentacea*. The flowers of Opiliaceae are always very small and monochlamydeous; the stamens are as many as and opposite to the tepals. Other typical characters are the hypogynous disc (annular or lobed) and the drupaceous fruit.

Detailed descriptions of the genera and species will be given in the "Flora of Thailand". For localization of many KERR-specimens the paper of JACOBS (1962) was used.

### KEY TO GENERA

1. Flowers ♂, in racemes or spikes
2. Flowers in short spikes, solitary in the axil of small bracts. Tepals united, tube 2.5-3 mm, urceolat, 4-lobed, lobes shorter than tube, recurved. Rachis, bracts and perianth pubescent. Stamens not exceeding the tube; disc scales alternating with the stamens. Drupe ellipsoid, c. 12 mm long, orange. Scandent shrub, often spiny when young; leaves glossy above  
2. *Cansjera*
2. Flowers in racemes, covered by large bracts when young
3. Bracts peltate, caducous before anthesis; flowers ternate, rachis and pedicels densely hairy. Flowers 5-4-merous, tepals free, recurved; filaments long, filiform; disc-lobes alternating with stamens, thick and fleshy. Drupe ellipsoid, c. 2 cm long, red. Liana 1. *Opilia*
3. Bracts not peltate, rachis of racemes and pedicels glabrous
4. Flowers ternate, bracts broadly ovate, caducous before anthesis. Flowers 4-merous, tepals free, recurved; filaments long, filiform; disc fleshy, annular. Drupe ellipsoid, 8-10 mm long, bright red. Shrub or small tree 5. *Urobotrya*

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4. Young inflorescences similar to those of *Urobotrya*. Flowers 4-merous, tepals united, deeply 4-parted, tube cupular, lobes patent; filaments short; disc cupular with irregularly lobed margin. Drupe ellipsoid, 9-16 mm long, orange. Shrub or small tree 6. *Lepionurus*
1. Flowers ( $\sigma^7$ ) ( $\varnothing$ ) or polygamous, in panicles or panicle like inflorescences, often cauliflorous
5. Pedicels present when flowering, peg-like; panicle widely branched; flowers solitary or fascicled along the rachis. Flowers 5 (sometimes 4- or 6-)merous; in male flowers filaments filiform; ovary half immersed in the fleshy, almost annular disc. Drupe ellipsoid, 1-1.3 cm long, yellow. Small tree or shrub 3. *Champereia*
5. Pedicels absent when flowering, or extremely short (female flowers); male flowers often densely clustered. Flowers 4-5-merous; filaments very short; disc lobed. Drupes with short pedicels, ellipsoid, 2.3-3 cm long, yellowish. Tree 4. *Melientha*

### 1. *Opilia*

Roxb., Pl. Corom. 2: 31, t. 158. 1799; Valetton, Crit. Overz. Olac.: 153. 1886.—*Groutia* Guill. & Perr., Fl. Seneg. Tent.: 100, t. 22. 1831.

*Opilia amentacea* Roxb., loc. cit.; Fl. Ind. 2: 87. 1832; Miq., Fl. Ind. Bat. 1, 1: 784. 1856; Benth., Fl. Austral. 1: 394. 1863; Mast. in Hook.f., Fl. Br. Ind. 1: 583. 1875; Kurz, Fl. Burm. 1: 238. 1877; Valetton, loc. cit.: 154; Trim., Fl. Ceyl. 1: 258. 1893; Brandis, Indian Trees: 150. 1906; Gagnep. in Fl. Gén. I.—C. 1: 804. 1911; Back. & Bakh. f., Fl. Java 2: 66. 1965.

*Opilia pentitidis* Blume, Mus. Bot. 1: 246. 1851; Miq., loc. cit.; Valetton, loc. cit.: 155.—*Opilia javanica* Miq., loc. cit.—*Opilia thorelii* Gagnep., Not. Syst. 1: 206. 1910; in Fl. Gén. I.—C. 1: 804, fig. 90. 1911.—*Opilia fragrans* Elmer, Leaf. Philip. Bot. 5: 1824. 1912.

**Thailand.**—NORTHERN: Nan, Hue Kua, 300 m, Kerr 5024 (AAU, ABD, BK); Lampang, Me Ta, 400 m, Kerr 4838 (AAU, ABD, BK); Lampang, Che Sawn, Kerr 4773 (AAU, ABD, BK); Muang, Ban Long Kaut, c. 650 m, Kerr 1030 (BM, P); Phrae, Me Kam Pong, Flora of Siam 5213 (leg. Vanpruk 413), (BKF).—NORTH-EASTERN: Nakhon Phanom, Muk Dahan, Kerr 8405 (ABD, BK, UC).—EASTERN: Khemmarath, Thorel s.n., 1866-68 (P).—PENINSULAR:



Ko Tao, Kerr 16090 (BM); Phuket, Ko Naka, Kerr 17363 (K, L); Adang I., Kerr 14068 (BM, K).

**Distribution.**—Africa, from India (type) to New Guinea and N. Australia.

**Ecology.**—Woody climber in deciduous forest or in beach forest, from sea level up to 650 m.

## 2. *Cansjera*

Juss., Gen.: 448. 1789 (nom. cons.); Valetton, Crit. Overz. Olac.: 156. 1886.—*Tsjeru-caniram* Adans., Fam. Pl. 2: 80. 1763.

*Cansjera rheedii* J.F. Gmelin, Syst. Nat. 2: 280. 1791; 'Cansiera'; Wight, Ic. 5: t. 1861. 1852; Brandis, For. Fl.: 75. 1874; Mast. in Hook. f., Fl. Br. Ind. 1: 582. 1875; Kurz, Fl. Burm. 1: 237. 1877; Valetton, loc. cit.: 158; Trim., Fl. Ceyl. 1: 258. 1893; Brandis, Indian Trees: 149, fig. 69. 1906; Gagnep. in Fl. Gén. I.—C. 1: 809. 1911; Gamble, Fl. Madras: 193 (138). 1915.—*Cansjera malabarica* Lamk., Encyc. 3: 433. 1794. —*Cansjera scandens* Roxb., Pl. Corom. 2: 2, t. 103. 1799; Fl. Ind. 1: 441. 1832. —*Daphne polystachya* Willd., Sp. Pl. 2: 420. 1799. —*Daphne monostachya* Willd., loc. cit. —*Cansjera monostachya* (Willd.) M. Roemer, Syn. Monogr. 1: 16. 1846. —*Cansjera zizyphifolia* Griff., Calc. J. Nat. Hist. 4: 236. 1843, 'Cansiera zyziphifolia'; Not. Pl. Asiat. 4: 360. 1854; Ic. Pl. Asiat. 4: pl. DXXXVII. 1854; Kurz, Fl. Burm. 1: 237. 1877; Ridl., Fl. Mal. Pen. 3: 172. 1924.

**Thailand.**—NORTHERN: Chiang Mai, Doi Suthep, 360 m, Kerr 2245 (BM, E); same locality, 400 m, Sorensen, Larsen & Hansen 1017 (C), 700 m, 5735 (C, L); Doi Inthanon, Bunchuai 1467 (C, E, L); Ban Saliam, Kasin 808 (BK); Lamphun, Me Li, Pe forest, 390 m, Winit 1518 (BK, K); Lee (=Li?), 300 m, Smitinand 3713 (BKF); Tak, Pleunyit 438 (BK). —NORTH-EASTERN: Nong Khai, Phon Phi Say, Pradit 686 (BK); (Sakon Nakhon Vakoo, Adisai 163 (BK); Nakhon Phanom, Muk Dahan, 200 m, Kerr 8940 (ABD, BK); Khon Kaen, Phu Wiang, 100 m, Kerr 20682 (BK, BM) —EASTERN: Chaiyaphum, Tak Tone, Sakol 577 (BK); Khemmarat, Thorel 2804 (P);

Nakhon Ratchasima (Korat), Pak Thong Chai (BK), Katok, 200 m, Kerr 8204 (ABD, BK, BM, C, E, P, UC).—CENTRAL: Saraburi, Sahm Lahn forest, Maxwell 74–1001 (BK), Maxwell 75–116 (BK, B).—SOUTH-EASTERN: Chon Buri, Lam Chabang, 5 m, Phengnaren 1 (BKF), Ban Si Racha (Sriracha), Kerr 2103 (BM, K), Collins 662 (ABD, BM, K), Collins 1849 (BM, US); Chon Buri, Sattahip Distr., Toong Brong, Maxwell 71–95 (BK), Maxwell 71–764 (B, BK); Rayong, Sakol 248 (BK); Rayong, Ban Phe, Geesink & Hiepkco 7831 (B, L).—SOUTH-WESTERN: Kanchanaburi, Salak Phra, Sangkhachand 1623 (BKF); Phetchaburi, Hua Hin, 2 m, Marcan 2231 (ABD, BM, E); same locality, Marcan 2284 (ABD, BM), Marcan 2473 (ABD), Kerr 13431 (BK, BM, K, L), Umpai 69 (BK); Phetchaburi, Tung Luang, Kerr 20586 (BK, K, L); same locality, Marcan 2771 (ABD); Pran, Put 2442 (BK, BM, K, L).—PENINSULAR: Ko Samui Kerr 12636 (BK), Put 1289 (BK, BM, K, L); Surat, Kantuli, Put 4172 (BM, K, L); Satun (Satul), Adang I., Kerr 14153 (BK, BM, K).

**Distribution.**—India (type), Nepal, Andamans, Nicobars, Burma, S. China, Indo-china, Malay Penins., Sumatra, Borneo, Philippines.

**Ecology.**—In deciduous and mixed evergreen forest from sea level up to 700 m (Doi Suthep). Erect or mostly climbing shrub, root parasite (cf. Hiepkco & Weber 1977).

**Vernacular.**—Nang chong (N: Lee, fide Smitinand 3713); Ta kai hin (NE: Khon Kaen, fide Kerr 20682); Muat kon (SW: Hua Hin, fide Kerr 20586, Marcan 2231).

### 3. *Champereia*

Griff., Calc. J. Nat. Hist. 4: 237. 1843; Valetton, Crit. Overz. Olac.: 150. 1886.—*Champereya* Griff., Not. Pl. Asiat. 4: 362. 1854; Ic. Pl. Asiat. 4: pl. DXXXVII. 1854.—*Malulucban* Blanco, Fl. Filip.: 188. 1837 (nom. illeg.).—*Nallogia* Baill., Bull. Mens. Soc. Linn. Paris 2: 985. 1892; Hist. Pl. 11: 478. 1892.



*Champereia manillana* (Blume) Merr., Philip. J. Sci., Bot. 7: 233. 1912; Li, Woody Fl. Taiwan: 142, fig. 50. 1963 (under Santalaceae). Back. & Bakh. f., Fl. Java 2: 67. 1965;—*Cansjera manillana* Blume, Mus. Bot. 1: 246. 1851.—*Opilia manillana* Baill., Adansonia 3: 124. 1862.—*Opilia cumingiana* Baill., loc. cit.—*Champereia cumingiana* (Baill.) Merr., Philip. J. Sci. 1, Suppl.: 50. 1906.—*Champereya gnetocarpa* Kurz, J. Bot. 13: 325. 1875.—*Champereya griffithiana* Planch. ex Kurz, J. As. Soc. Beng. 44: 154. 1875; Hook. f., Fl. Br. Ind. 5: 236. 1886 ('*Champereia*' under Santalaceae).—*Champereia griffithii* Planch. ex Kurz, Fl. Burm. 2: 330. 1877; Ridl., Fl. Mal. Pen. 3: 172. 1924.—*Nallogia gaudichaudiana* Baill., Bull. Mens. Soc. Linn. Paris 2: 985. 1892.—*Champereia gaudichaudiana* (Baill.) van Tiegh., Bull. Soc. Bot. Fr. 41: 65. 1894.

T h a i l a n d.—EASTERN: Chaiphum, Nawng Bua Deng, c. 300 m, Kerr 20307 (BK, BM, K, L).—SOUTH-EASTERN: Rayong, Ban Phe, Put 2726 (BK, BM, K, L). same locality, Geesink & Hiepko 7823 (B, L); Chanthaburi, Lem Sing, Kerr 6944 (BK, K, L, PNH); Kao Sabap, c. 300 m, Kerr 17967 (BK, BM, K, L); Plain of Makam, Soerensen, Laren & Hansen 145 & 146 (c); Chanthaburi (Chantaboon) Vesterdal 2G (C, SING).—PENINSULAR: Chumphon, Hudsai Ree, Vacharapong 145 (BK); S. of Chumphon, Kerr 11858 (BK); Kra Buri, Vacharapong 194 (BK); Kaw Chang (Saddle I.), c. 200 m, Kerr 16617 (BK, BM); Ranong, Nak Nang, Kerr 16834 (BK, BM, K, L); Phangnga, Takuapa, Kerr 17039 (BK, BM, K, L); Ko Yao Yai, Hansen & Smitinand 12422 (C, E); Ko Boi Noi, Hansen & Smitinand 12434 (BKF, C); Satun, Tung Wa, Kerr 13908 (BK, BM, K, L); Adang I., Kerr 14003 (BK, BM, K, L); Pattani, Toh Moh, Lakshnakara 599 (BK, BM, K, L); Yala, Banang Sta, c. 200 m, Kerr 7299 (BM, K); Narathiwat, Waeng, Sangkhachand et al. 1063 (BKF).

D i s t r i b u t i o n.—Burma, Andamans, Nicobars, Vietnam, Taiwan, Malesia (type: Philippines).

E c o l o g y.—In evergreen forest, rarely in deciduous forest or scrub, from sea level up to 300 m, in Burma 700 m. Fl. Dec.—March; Fr. Jan.—April.

**Vernacular.**—Sen (E: Chaiphaphum, fide Kerr 20307); Pak wan (SE: Chanthaburi, fide Kerr 17967, PEN: Phangnga, fide Kerr 17039); Pak wan pa (SE: Rayong, fide Put 2726); Pak pum (PEN: Ranong, fide Kerr 16834); Puk pa (PEN: Pattani, fide Lakshnakara 599); cf. vernacular names of *Melientha suavis*.

**Uses.**—Fruits and young leaves (shoots) eaten as vegetables.

**Note.**—Confusion with the poisonous leaves of *Urobotrya siamensis* possible (see there).

#### 4. *Melientha*

Pierre, Bull. Mens. Soc. Linn. Paris 1: 762. 1888; Baill., Hist. Pl. 11: 457. 1892; Sleumer in Nat. Pflanzenfam. ed. 2, 16b: 36. 1935.

*Melientha suavis* Pierre, loc. cit.: 763; Fl. Coch. Fasc. 17: t. 264B. 1892; Gagnep. in Fl. Gén. I.—C. 1: 802. 1911.—*Melientha acuminata* Merr., Philipp. J. Sci. 29: 477. 1926.

**Thailand.**—NORTHERN: Lamphun, Me Lee, c. 400 m, Winit 133 (BM, K); Lampang, Ngao, Flora of Thailand 11258 (leg. Amnat 55), (BKF); Me Maw, 300 m, Kerr 3182 & 3182A (BM, K); Phrae, Flora of Thailand 10560 (leg. Panichapat 13), (BKF); Phrae, Flora of Siam 5214, leg. L.V.P. (=Vanpruk) 414 (BKF, K); Uttaradit, 100 m, Kerr 5881 (ABD, BK, UC); Sukhothai, Muang Gow, Maxwell 72–76 (BK); Nakhon Thai, 200 m, Kerr s.n., 16.4. 1922 (BM).—NORTH-EASTERN: Loei, Kao Krading, c. 500 m, Kerr 20034 (BK, BM, K); Loei, Wang Saphun, Flora of Thailand 33256 (leg. Phengnaren 316), (BKF, L); Nakhon Phanom, Muk Dahan, Kerr 8406 (ABD, B, BK, C, UC); Muk Dahan, Kao Ma No, Lakshnakara 942 (ABD, BK).—EASTERN: Surin, Put 666 (BK, K); Khemmarath, Thorel s.n., 1866–68 (P).—CENTRAL: Saraburi, Sahm Lahn forest, fide Maxwell in litt. (8.5. 1975).—SOUTH-EASTERN: Chon Buri, Lham Chabang, Flora of Thailand 32057 (leg. Phengnaren 210) (BKF, L); Chon Buri, Ban Si Racha, Collins 120 (BM, K); same locality, Marcan 1363 (ABD); Chon Buri, Kow Kieo, 150 m, Maxwell 75–70 (B, BK), 200 m, Maxwell 76–136 (B, BK); Chanthaburi, Bong Nam Rawn, 200 m, Maxwell 75–452 (B, BK).—SOUTH-WESTERN:



Kanchanaburi, Kerr 10628 (BK, BM, K); Erawan Nat. Park, van Beusekom & Phengkhai 496 (AAU, L); Prachuap, Pran Buri, Phengnaren 148 (B, BKF 31320).

**Distribution.**—Laos, Vietnam, Cambodia (type), Malay Peninsula, Philippines.

**Ecology.**—In deciduous forests locally common, rarely in dry evergreen forest. From sea level (in beach forest) up to c. 500 m. Fl. Dec.—March; Fr. April—June.

**Vernacular.**—Phak Whan or Pak Wan (all over Thailand according to several collectors: Kerr, Put, Winit). Phengnaren (148) uses Pak wan pa in contrast to Pak wan dong for *Urobotrya siamensis* (see also there).

**Uses.**—Young shoots (and flowers) eaten as vegetables (notes of many collectors). Wood used for Charcoal (Maxwell in litt.).

**Note.**—Because of the cutting for vegetables the trees are often sterile. Since identification of *Melientha suavis* without flowers or fruits is difficult, similar leaves of other species are sometimes eaten. If leaves of the widespread *Urobotrya siamensis* are eaten these may cause deaths by poisoning (see also under *Urobotrya*).

### 5. *Urobotrya*

Stapf, J. Linn. Soc. London 37: 89. 1905; Hiepko, Ber. Deutsch. Bot. Ges. 84: 662. 1972.—*Opilia* subgen. *Urobotrya* (Stapf) Engler, Bot. Jahrb. Syst. 43: 171. 1909; Sleumer in Nat. Pflanzenfam. ed. 2, 16b: 38. 1935. Sect. *Lepionuroides* Hiepko, Willdenowia 6: 471. 1972 (without type species). In order to validate the publication of this sect. nov. I designate the type species here: *Urobotrya latisquama* (Gagnep.) Hiepko (Syn.: *Lepionurus latisquamus* Gagnep.)

### KEY TO SPECIES

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|--|-------------------------|
| Inflorescence 2.5–4 cm long, bracts of the ternate flowers 4 by 5 mm, tepals and filaments 2 mm long, fruit 8–10 by 6.5–8 mm       | 2. <i>U. siamensis</i>  |
| Inflorescence 7–11 cm long, bracts of the ternate flowers 6–7 by 6–7 mm, tepals 3 mm; filaments 4–5 mm long, fruit 13–15 by 7–9 mm | 1. <i>U. latisquama</i> |

1. *Urobotrya latisquama* (Gagnep) Hiepko, Ber. Deutsch. Bot. Ges, 84 (1971): 662. 1972.—*Lepionurus latisquamus* Gagnep., Notul. Syst. (Paris) 1: 201. 1910; in Fl. Gén. I.—C. 1: 807, fig. 91. 1911; ditto, Suppl. 1: 733. 1948.—*Lepionurus macrostachyus* Gagnep., Notul. Syst. (Paris) 1: 202. 1910; in Fl. Gén. I.—C. 1: 808. 1911.—*Lepionurus oxylepis* Gagnep., Notul. Syst. (Paris) 13: 135. 1947; in Fl. Gén. I.—C. Suppl. 1: 733. 1948.

Thailand.—NORTH-EASTERN: Loei, Pu Tong, c. 1000 m, Kerr 8866 (BM, K).

Distribution.—N. Laos (type), N. Vietnam, S. China.

Ecology.—In evergreen forest up to 1000 m.

Vernacular.—Hèn tum (fide Kerr).

2. *Urobotrya siamensis* Hiepko, Willdenowia 6: 471. 1972.—Type: Northern Thailand, Kamphaeng Phet, Sørensen, Larsen & Hansen 6625 (K, holo—; BKF, c. iso—).

Thailand.—NORTHERN: Lampang, Mè Lawng, 230 m, Winit 1243 (BK, K); Uttaradit, Bunyarataphand 134 (BK); Sukhothai prov. Muang Gow, Maxwell 72–67 (AAU, BK); Kamphaeng Phet, 100 m, Sørensen, Larsen & Hansen 6625 (type: K, holo—; BKF, c. iso—); Me Wong, 600 m, Kerr s.n., 3.6 1922 (BM).—NORTH-EASTERN: Sakon Nakhon, Phu Phan, Suvannakoset 2056 (BKF 46425, L).—EASTERN: Chaiyapum, 200m, Kerr 19971 (BK, BM, K, L); Nakon Rat Sima, Pak Thong Chai, 450 m, Damrongsak 492 (B, BKF); Korat, Chantuk, 300 m, Kerr s.n., 9.1. 1924 (K, L); Ban Ta Chang, Put 3590 (BK, BM); Pak Chong, 300 m, Marcan 1503 (K).—CENTRAL: Chaibadan, Dong Paya Yen, 50 m, Kerr 7990 (BK, BM, K); Saraburi, Puket, Sørensen, Larsen & Hansen 96 (C); Saraburi, Sahm Lahn forest, 50 m, Maxwell 73–751 (AAU, BK), Geesink, Hiepko & Maxwell 7807 (B, L); Nakhon Nayok, Salica, Sakol & Jalay 2032 (BK).—SOUTH-EASTERN: Ban Siracha [Sriracha], Khaw Chalat, Collins 888 (BK, K, L, US), Hoop Farang, Collins 1518 (BK, K), Khaw Din, Collins 1986 (BK, BM, K, US); Chon Buri, Ban Bung, 100 m, Phengnaren 210 (K, L), Kow Kieo, 300 m, Maxwell 74–1052 (B, BK); Chantaburi, 800 m, Nuphakdee 37 (BKF), 118 (BKF); Chantaburi, Tamun, 200 m, Kerr 9703 (BK, BM, K, L), Kao Sabap, 600 m,



Kerr 17995 (BK, BM, K, L); Chantaburi, Khao Soi Dao, c. 200 m, Fukuoka T7326 (C); same locality, Geesink & Hiepko 7915 (B, L); Chantaburi, Lam Sing, Maxwell 72—555 (AAU, BK).—SOUTH-WESTERN: Kanchanaburi, Erawan Nat. Park, van Beusekom & Phengklaï 506 (L), same locality, 400 m, van Beusekom, Geesink, Phengklaï & Wongwan 3853 (L), Larsen 9258 (C); Srisawasdi, Kasem s.n., I. 1971 (BK), Pong Narom, 220 m, Smitinand 3176 (B, BKF, C), Hard Palom, 320 m, Larsen 8831 (AAU, C, K); Kanburi, Sisawat, 50 m, Kerr 10155 (BK, BM, K, L), Nong Daeng, Phengklaï 253 (BKF, C, K, L); Rachaburi, Huai Yang, Larsen, Smitinand & Warncke 1295 (AAU); Phetburi, Kao Voung, Sakol 483 (BK), Kangkayan, Sakol 530 (BK); Pran, Ban Pak Tawan, 30 m, Marcan 2652 (ABD, BM, K); Prachuap, Pranburi, Phengklaï 727 (BKF, L), Kuiburi, Adisai 968 (BK); Bangtapan, Put 1348 (BK, BM); Sam Roi Yawt, Put 2475 (BK, BM, K, L).

*Distribution*.—NW. Laos, Burma, S. Vietnam.

*Ecology*.—Locally common in dry evergreen forest, rarely in deciduous forest, often on limestone hills. In Thailand from sea level up to 800 m, in S. Vietnam up to 1000 m. Fl. Nov.—June.

*Vernacular*.—Kin man (E: Pak Chong, fide Marcan); Phak wan dong (SE: Chon Buri, fide Phengnaren 210), in contrast to Phak wan pa for *Melientha suavis* Pierre (fide Phengnaren 148).

*Uses*.—Leaves and/or fruits locally used for a medicine against intestinal parasites, in larger amounts a deadly poison (Maxwell in litt.).

*Note*.—Young shoots sometimes eaten instead of those of *Melientha suavis* Pierre with fatal results (see there).

## 6. *Lepionurus*

Blume, Bijdr.: 1148. 1826; Valetton, Crit. Overz. Olac.: 151. 1886.—*Leptonium* Griffith, Calc. J. Nat. Hist. 4: 236. 1843.—*Opilia* sect. *Lepionurus* (Bl.) Baill., Adansonia 3: 75. 1862.

*Lepionurus sylvestris* Blume, loc. cit.; Miq., Fl. Ind. Bat. 1,1: 784. 1856., Kurz, Fl. Burm. 2: 330. 1877; Valetton, loc. cit.: 153; Brandis, Indian Trees: 150. 1906; Gagnep. in Fl. Gén. I.—C. 1: 806. 1911; Ridl., Fl. Mal. Pen. 3: 172. 1924; Kanjilal et al., Fl. Assam 1: 250. 1936; Back. &

Bakh. f., Fl. Java 2: 67. 1965.—*Lepionurus sylvestris* Bl. var. *lanceolata* Valetton, loc. cit.—*Opilia acuminata* [Wall. Cat. no. 7206. 1829, nom. nud.] ex Baill., loc. cit.—*Leptonium oblongifolium* Griff., loc. cit.: 237; Not. Pl. Asiat. 4: 368. 1854; Ic. Pl. Asiat. 4: pl. DXXXVI. 1854.—*Lepionurus oblongifolius* (Griff.) Mast. in Hook. f., Fl. Br. Ind. 1: 583. 1875.—*Lepionurus oblongifolius* var. *angustifolius* Ridl., loc. cit.: 173.

**Thailand.**—**NORTHERN:** Chiang mai, Khao Chiang Dao, Bunchuai 1358 (BKF 46283, L); Doi Nang Ka, Put 3320 (BM, K); Chiang Mai, Doi Suthep, 150 m, Bunchuai 642 (BKF), 800 m, Kerr 731 (BM, K), 1000 m, Sørensen, Larsen & Hansen 4405 (C), 1250 m, 4733 (C), 1100 m, 5171 (C), 800 m, 5874 (C).—**PENINSULAR:** Chumpon, Pato, c. 100 m, Kerr 12918 (K); Ranong, Klong Naka, c. 50 m, Geesink, Hiepkco & Phengkai 7567 (B, L); Surat, Ban Na, Yuang 43 (K); Khao Lang Tao, 450 m, Smitinand & Sleumer 1285 (BKF, L); Surat, Kao Tapet, Sakol 1023 (BK); Surat, Ban Tong Tao, c. 10 m, Kerr 13391 (K, L); Nakhon Si Thammarat, 600 m, Suvarnakoses 172 (BKF); same locality, Thavorn 946 (BKF); Trang, Chong, Collins 2353 (K, US), 2393 (BM, K, US); Trang, Khao Chong, Charoenphol, Larsen & Warncke 3723 (AAU); Trang, Bang Sak, Kerr s.n., 19.4. 1930 (BM); Trang, Kantang, SF 4705 (leg. Haniff & Nur) (BM, K, SING); Phatthalung, Sak, Kerr 19267 (BM, K, L); Songkhla, Kao Keo, c. 500 m, Kerr 15937 (BM); Pattani, Kao Kalakiri, c. 200 m, Kerr 15037 (BK, BM, K, L); Yala, Betong, c. 200 m, Kerr 7634 (BK, BM, K).

**Distribution.**—Nepal, Assam, Burma, S. China, S. Vietnam, Malay Peninsula, Sumatra, W. Java (type). Borneo.

**Ecology.**—In evergreen forest up to 1250 m (Doi Suthep).

**Vernacular.**—Mak mok (Trang, Pattani, fide Kerr).

**Uses.**—Locally used as medicinal plant (root) for fever, fide Suvarnakoses 172 (Nakhon Si Thammarat) and Kerr (Trang).

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- ABD Dept. of Botany, Univ. Aberdeen, Great Britain
- BK Botanical Section, Dept. of Agriculture, Bangkok, Thailand
- BKF The Forest Herbarium, Royal Forest Dept., Bangkok
- BM British Museum (Natural History), London, Great Britain
- C Botanical Museum, Copenhagen, Denmark
- E Royal Botanic Garden, Edinburgh, Great Britain
- K Herbarium, Royal Botanic Gardens, Kew, Great Britain
- L Rijksherbarium, Leiden, Netherlands
- P Muséum National d'Histoire Naturelle, Laboratoire de Phanérogamie, Paris, France
- SING Herbarium, Botanic Garden, Singapore
- UC Herbarium of the Univ. of California, Berkeley, Calif., U.S.A.
- US U.S. National Herbarium, Smithsonian Institution, Washington, D.C., U.S.A.

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- HIEPKO, P. & WEBER, H. Chr. 1978 : Zur Wuchsform und Haustorienbildung des Wurzelparasiten *Cansjera rheedii* Gmel. (Opiliaceae).—*Willdenowia* 8 : in press.

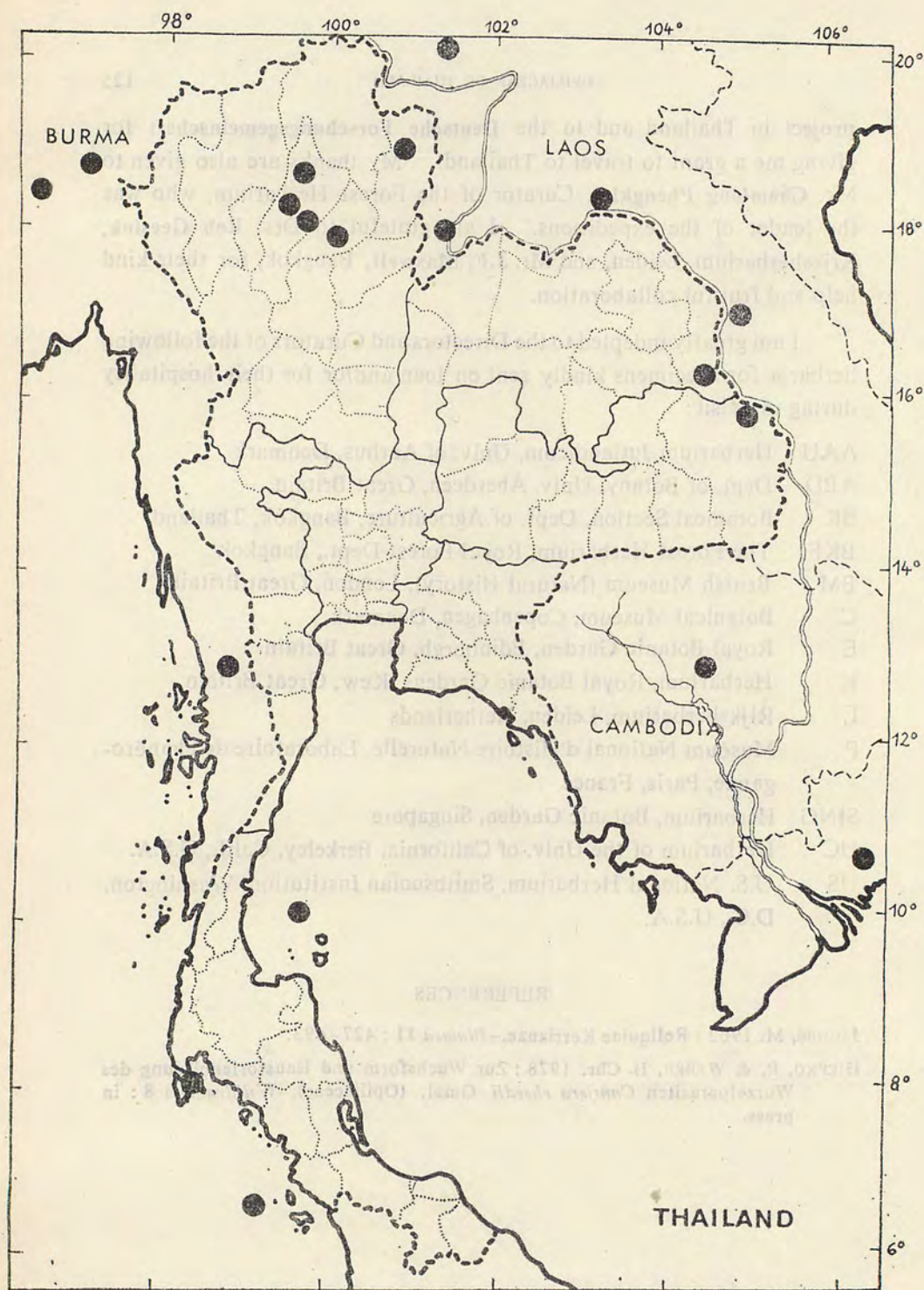


Fig. 1. Distribution of *Opilia amentacea* Roxb. in Thailand and neighbouring countries.



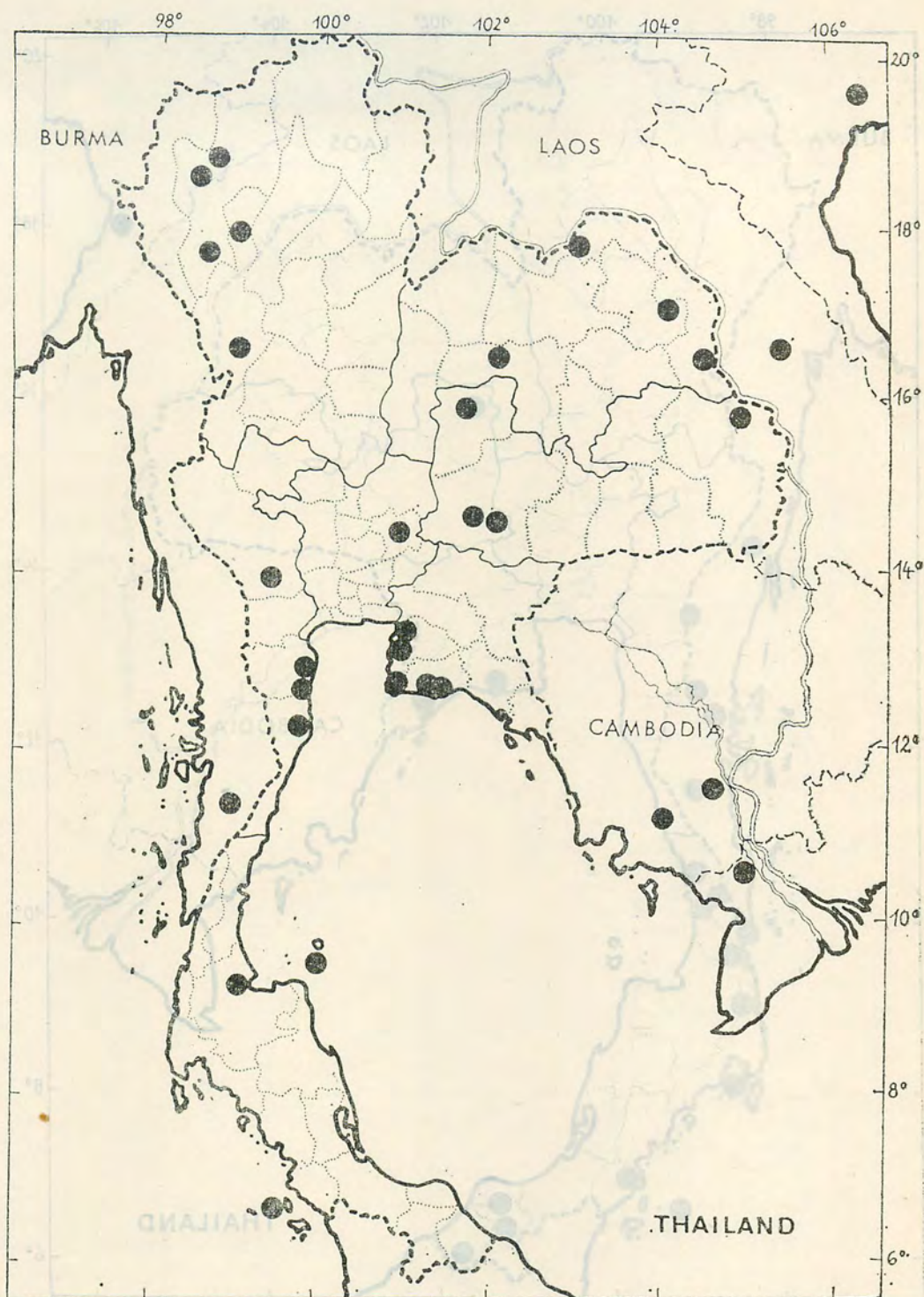


Fig. 2. Distribution of *Cansjera rheedii* J.F. Gmelin in Thailand and neighbouring countries.

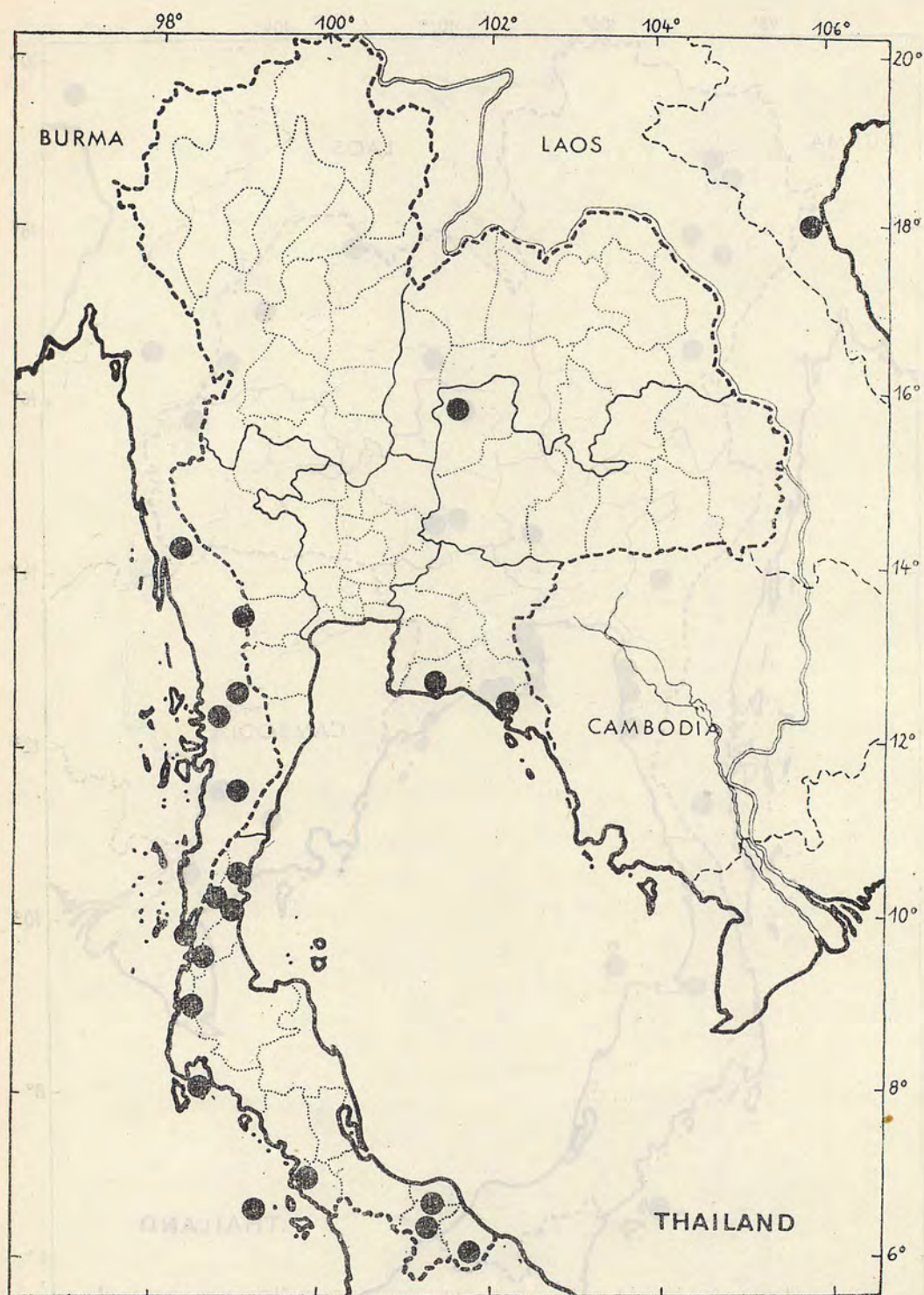


Fig. 3. Distribution of *Champereia manillana* (Blume) Merr. in Thailand and neighbouring countries.



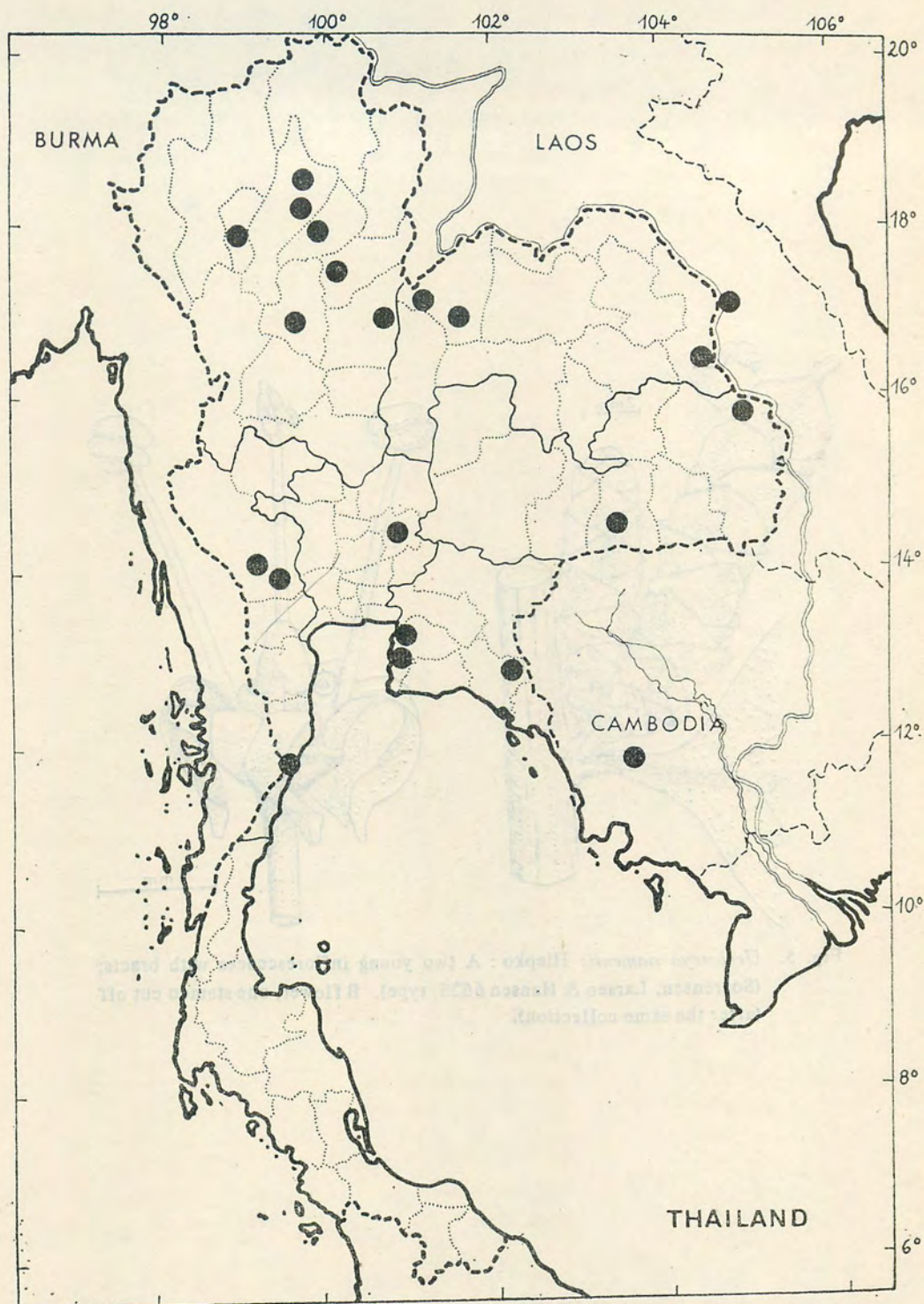


Fig. 4. Distribution of *Melientha suavis* Pierre in Thailand and neighbouring countries.

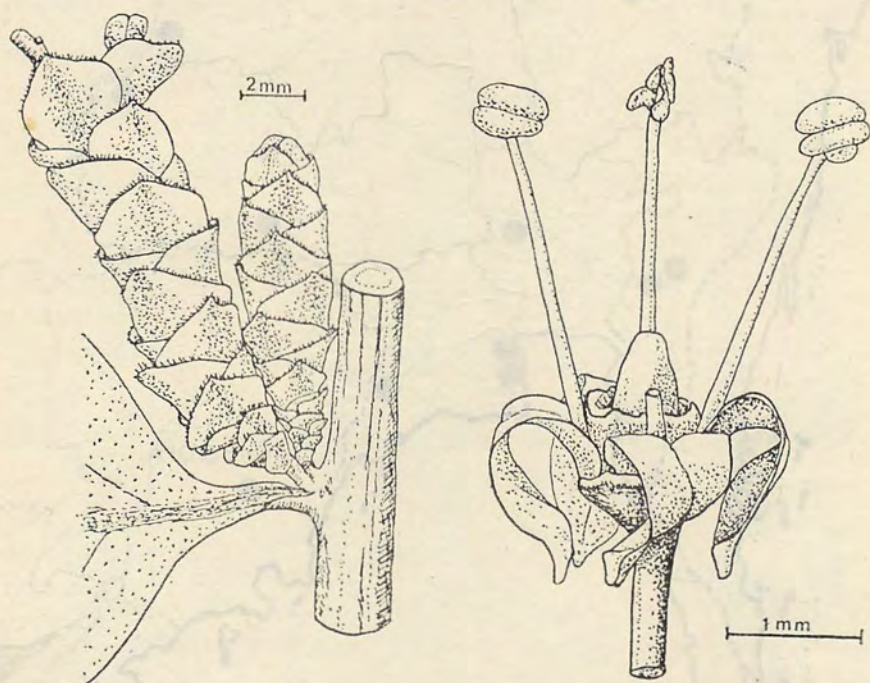


Fig. 5. *Urobotrya siamensis* Hiepko : A two young inflorescences with bracts; (Soerensen, Larsen & Hansen 6625, type). B flower, one stamen cut off (after the same collection).



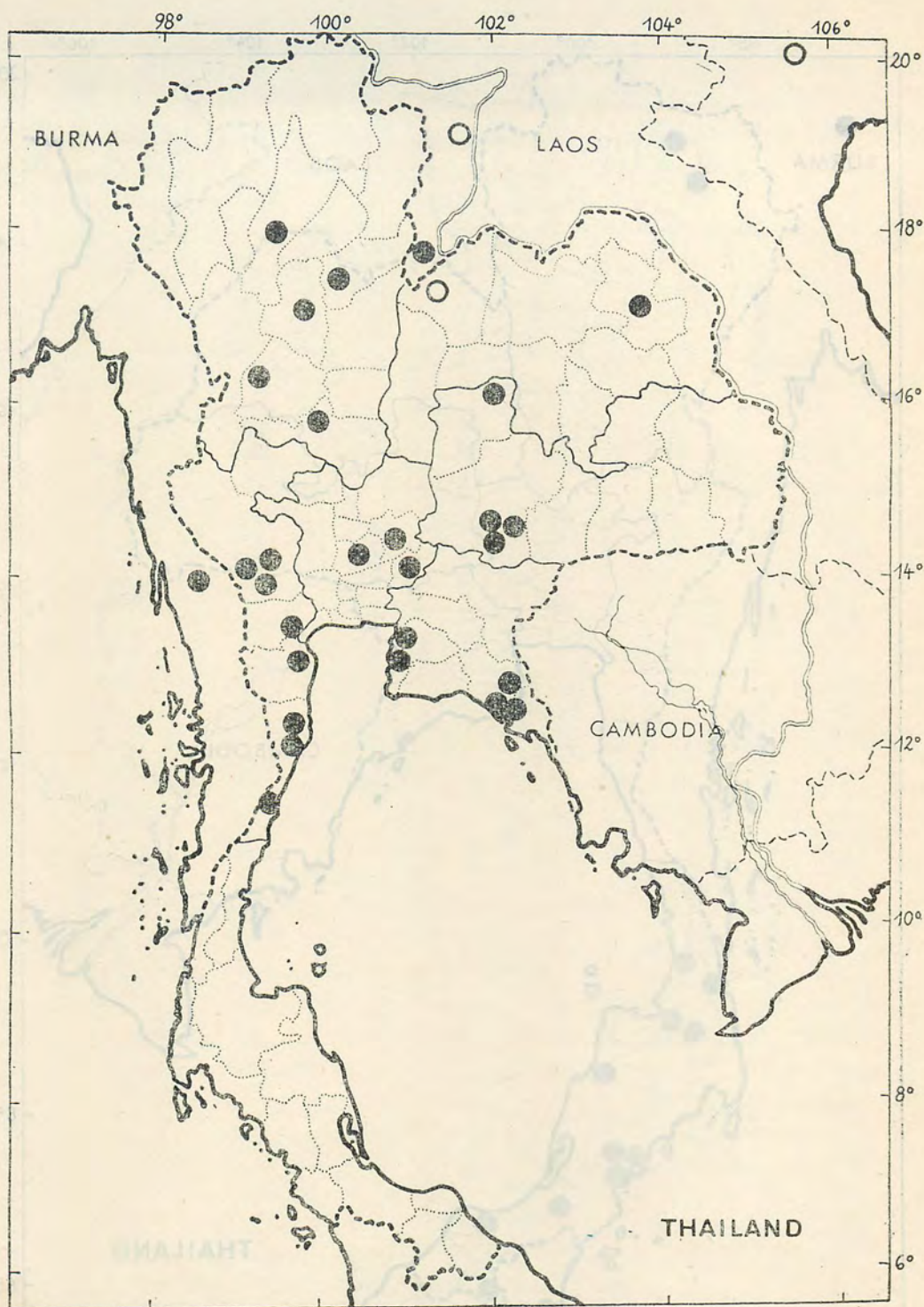


Fig. 6. Distribution of *Urobotrya siamensis* Hiepkö (●) and *U. latisquama* (Gagnep.) Hiepkö (○) in Thailand and neighbouring countries.

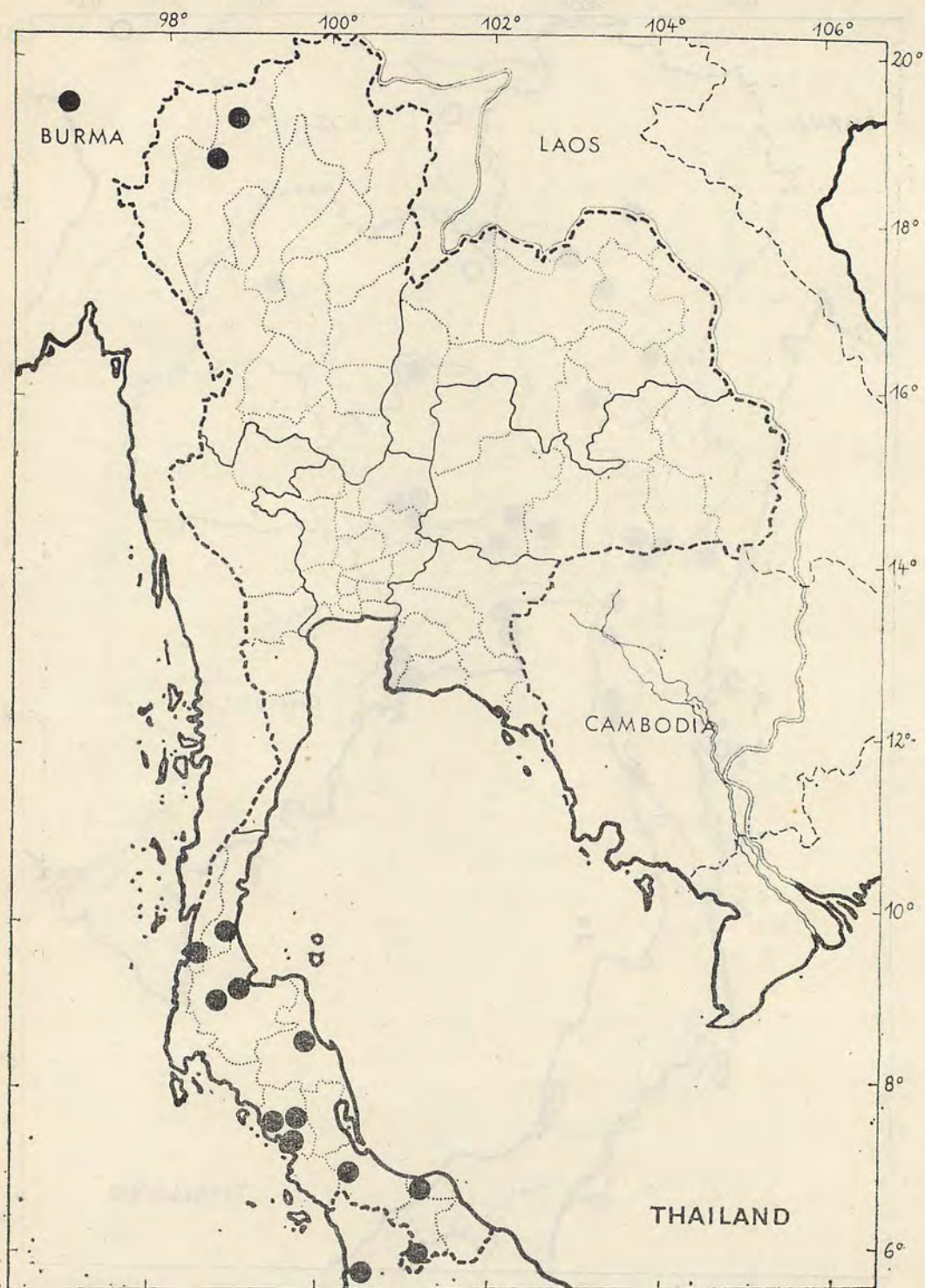


Fig. 7. Distribution of *Lepionurus sylvestris* Blume in Thailand and neighbouring countries.